

Trend Study 2-32-01

Study site name: Wood Pass.

Vegetation type: Juniper.

Compass bearing: frequency baseline 165 degrees magnetic.

Frequency belt placement: line 1 (11 & 95ft), line 2 (71ft), line 3 (59ft), line 4 (34ft).

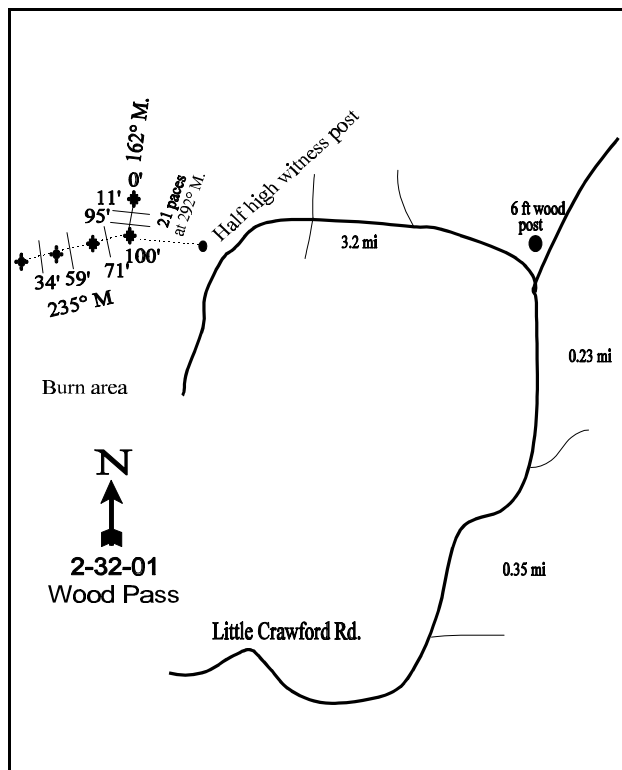
LOCATION DESCRIPTION

From the intersection of Wilson Lane and Little Crawford Road east of Woodruff proceed northeast for 1.35 miles to a fork. Turn left and travel 0.35 mile to another fork. Turn left and proceed 2.6 miles to a third fork marked by a six-foot tall wooden post. Turn left and proceed 3.2 miles staying on the main road, to a witness post just off the right side of road. From the witness post walk 21 paces at 292 degrees magnetic to the 100-foot baseline stake. Walk 100 feet at 342 degrees magnetic from the 100-foot stake to the 0-foot baseline stake. The 0-foot stake is marked by browse tag #7942. The baseline doglegs at 100 feet and runs 235 degrees magnetic.



Map Name: Woodruff Narrows

Township 10N, Range 7E, Section 13



Diagrammatic Sketch

UTM 4605849 N, 491564 E

DISCUSSION

Trend Study No. 2-32

The Wood Pass trend study is located on the east side of the Crawford Mountains approximately ½ mile south of Wood Pass. Elevation (6,800 feet) is moderately high, yet the area is still considered critical winter range. The study site lies on a gentle (10%), southeast-facing slope. The range type is an open juniper woodland with an abundant association of low-growing black sagebrush and Wyoming big sagebrush. Animal use includes cattle in spring and summer, and deer and elk in winter. Pronghorn and sage grouse use the area continuously. Deer pellet groups are the most abundant. The intensity of use is moderate to high and is most evident on juniper. Depending on the winter, snow depth could limit mid-winter utilization of the sagebrush. A pellet group transect read along the study site baseline in 2001 estimated 19 deer and 9 cow days use/acre (46 ddu/ha and 23 cdu/ha).

The NRCS classifies the study site as "Solak Gravelly Loam, Dry." This is a shallow, excessively drained soil formed residually from limestone and sandstone parent material. Total soil depth does not usually exceed 20 inches. Permeability to water is moderate, but available water capacity is low and erosion hazard is high. This soil, although occupied by Utah juniper, has a very low site productivity index or capability for producing juniper (Campbell and Lacey 1982). Soils at the site have a clay loam texture with a soil reaction that is slightly alkaline (pH of 7.4). Effective rooting depth (see methods) is variable, ranging from 10 inches to nearly 14 inches along the baseline. Average effective rooting depth is almost 10 inches. Black sagebrush will be found in the more shallow soil, while Wyoming big sagebrush occupies the deeper soil. The soil is rocky throughout the profile with a calcareous layer at about 10 to 12 inches. Phosphorus could be a limiting factor at only 4.5 ppm as values less than 10 ppm may limit normal plant growth and development. Potassium is marginal at 70.4 ppm where values less than 70 ppm could be limiting. There is some localized erosion, but it is not severe. The erosion condition class was determined as stable in 2001.

The important species include Utah juniper, Wyoming big sagebrush, and black sagebrush. Between 1984 and 1990, both Wyoming big sagebrush and black sagebrush had relatively stable populations of about 4,500 and 1,500 plants/acre respectively. Black sagebrush was classified mostly as lightly hedged, but had a high decadency rate of 65% in 1990. Wyoming big sagebrush showed light to moderate hedging and generally had good vigor. Decadency was also moderately high at 56% in 1984 and 41% in 1990. During the 1996 reading, the baseline was extended from 100 feet to 400 feet. This new and much larger sample estimated a population density for black sagebrush of 3,800 plants/acre. Due to the lack of large numbers of seedling and young plants on previous readings, this new estimate does not represent an increase in density, but a more accurate estimate of the actual black sagebrush population over the whole area. Utilization of the black sagebrush was light to moderate with good vigor. Percent decadence was moderate at 25%. Wyoming big sagebrush density declined with the new, larger sample size from 4,532 plants/acre in 1990 to 2,440 in 1996. The change in density came primarily from a reduction in the density of young and decadent plants. Some of the change may be due to the new, larger sample used in 1996. Density of mature shrubs remained similar between readings. During the 2001 reading, both populations of sagebrush remained relatively stable. Utilization continues to be light to moderate, vigor normal on most plants, and percent decadence moderately low.

The trend for juniper density appears to be increasing with each reading of the shrub plots or strips, but the sample is too small to get a good estimate of its real density. The strip counts can be used to determine trends, yet should not be considered as reliable to estimate tree density. Density strip data in 1996 indicated that 28% of the population was classified as young trees. Point-quarter data gives a much better population estimate for trees. Data from 1996 estimated 235 trees/acre with an average diameter of just over 5 inches. Canopy cover varied from 8% to 34% in 1996, with an average of 15% cover for the site. Some of the more mature trees were highlined. Point-quarter data from 2001 estimated 216 trees/acre with an average diameter of 6 inches. Canopy cover was estimated at 13%.

The herbaceous understory is diverse but not abundant. Eight perennial grasses produced less than 6% total cover in 1996 and 9% in 2001. Sandberg bluegrass is the most abundant species. Forbs are also diverse yet few occur more than occasionally. Hoods phlox is the only common species. This low growing species accounted for 74% of the forb cover in 1996 and 55% in 2001.

1984 APPARENT TREND ASSESSMENT

Soil appears to be stable in spite of a few small active "rills" and some soil compaction in the immediate vicinity. Ground cover is adequate but certainly not outstanding. The sagebrush populations are half decadent with moderate utilization. Recruitment appears adequate to maintain the stand. The greatest potential change will likely concern density and canopy cover of Utah juniper.

1990 TREND ASSESSMENT

Density data indicates a slight increase in juniper on this open site. The trees are highlined. Sagebrush is common on the density plots where a large number of young sagebrush were classified. The sagebrush currently display a moderately hedged growth form. Rabbits have heavily browsed the low rabbitbrush. The herbaceous understory is typically sparse, but there is a fair diversity of perennial species. Although there are deeper swales dominated by sagebrush, the majority of the site has shallow soil with moderate pavement cover and soil movement.

TREND ASSESSMENT

soil - stable but in poor condition (3)

browse - stable (3)

herbaceous understory - stable (3)

1996 TREND ASSESSMENT

Ground cover characteristics are similar to 1990, indicating a stable soil trend. The browse trend is up for black sagebrush and Wyoming big sagebrush. Black sagebrush shows improved vigor and a decline in percent decadence from 65% to 25%. Wyoming big sagebrush is less heavily utilized, and displays improved vigor and a decline in percent decadence. Seedlings and young plants are in sufficient numbers to maintain the population. Total density has declined, but the number of mature plants is similar to 1990 estimates. Some of the change in density of black sagebrush and Wyoming big sagebrush are due to the larger sample used in 1996. Trend for the herbaceous understory is stable but deficient. Sum of nested frequency for grasses increased slightly while sum of nested frequency for forbs remained similar to 1990 estimates. Nested frequency of the dominant grass, Sandberg bluegrass, declined slightly but not significantly.

TREND ASSESSMENT

soil - stable (3)

browse - up (5)

herbaceous understory - stable (3)

2001 TREND ASSESSMENT

Trend for soil is down slightly. Percent cover of bare ground has increased and the ratio of protective ground cover to bare ground has also decreased. There is some localized erosion occurring but the erosion condition class was determined to be stable. Trend for black and Wyoming big sagebrush is stable. Black sagebrush has remained at a similar density compared to 1996. Utilization is mostly light, vigor normal, and percent decadence similar (25% to 31%). Recruitment is currently poor and the population could decline slightly if drought conditions continue. Wyoming big sagebrush displays mostly light use and good vigor. Percent decadence has also declined from 30% to 21%. Recruitment is good with 16% of the population consisting of young plants. Both sagebrush species displayed minimal annual leader growth in 2001. Average annual leader growth for black sagebrush was ½ of an inch, while Wyoming big sagebrush averaged just under 1 inch. Trend for the herbaceous understory is mixed. Sum of nested frequency of perennial grasses remained similar to 1996 even though sum of nested frequency for perennial forbs increased. Since grasses provide 67% of the herbaceous cover, the overall herbaceous trend is considered stable.

TREND ASSESSMENT

soil - down slightly (2)

browse - stable (3)

herbaceous understory - stable (3)

HERBACEOUS TRENDS --

Herd unit 02 , Study no: 32

T y p e	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
G	Agropyron smithii	_b 31	_a -	_c 88	_{bc} 58	13	-	32	23	.97	.49
G	Agropyron spicatum	_a 47	_b 79	_a 34	_{ab} 64	24	38	15	27	.65	2.08
G	Bromus tectorum (a)	-	-	25	30	-	-	10	9	.10	.45
G	Oryzopsis hymenoides	_a 8	_a 17	_b 32	_{ab} 19	7	6	16	11	.52	.63
G	Poa fendleriana	-	-	13	10	-	-	5	5	.07	.10
G	Poa secunda	_a 145	_b 206	_b 191	_b 198	63	75	71	71	3.28	3.77
G	Sitanion hystrix	_b 36	_a 9	_{ab} 26	_{ab} 16	16	3	9	8	.11	.57
G	Stipa comata	_{ab} 7	_a 5	_a 17	_b 25	5	3	8	12	.21	.78
Total for Annual Grasses		0	0	25	30	0	0	10	9	0.10	0.45
Total for Perennial Grasses		274	316	401	390	128	125	156	157	5.84	8.43
Total for Grasses		274	316	426	420	128	125	166	166	5.94	8.89
F	Agoseris glauca	-	-	3	3	-	-	1	1	.00	.03
F	Alyssum alyssoides (a)	-	-	-	6	-	-	-	3	-	.01
F	Antennaria rosea	_a -	_a 4	_{ab} 8	_b 15	-	2	4	7	.31	.25
F	Arabis spp.	_a -	_a -	_b 10	_{ab} 1	-	-	5	1	.02	.00
F	Arenaria spp.	1	-	-	-	1	-	-	-	-	-
F	Astragalus convallarius	8	-	10	7	3	-	4	4	.02	.10
F	Astragalus utahensis	_b 29	_{ab} 14	_{ab} 21	_a 14	15	8	9	8	.12	.11

T y p e	Species	Nested Frequency				Quadrat Frequency				Average Cover %	
		'84	'90	'96	'01	'84	'90	'96	'01	'96	'01
F	<i>Calochortus nuttallii</i>	4	-	-	-	2	-	-	-	-	-
F	<i>Chaenactis douglasii</i>	7	-	-	-	3	-	-	-	-	-
F	<i>Cirsium undulatum</i>	-	-	-	3	-	-	-	1	-	.00
F	<i>Collomia linearis</i> (a)	-	-	-	3	-	-	-	1	-	.03
F	<i>Comandra pallida</i>	6	5	-	-	3	3	-	-	-	-
F	<i>Cordylanthus ramosus</i> (a)	-	-	15	36	-	-	10	16	.10	.18
F	<i>Crepis acuminata</i>	_b 11	_a 2	_a 3	_a 1	6	2	2	1	.06	.00
F	<i>Cryptantha</i> spp.	_b 25	_a -	_{ab} 8	_c 47	10	-	4	19	.09	.58
F	<i>Cymopterus</i> spp.	-	-	-	2	-	-	-	1	-	.03
F	<i>Cynoglossum officinale</i>	-	-	-	3	-	-	-	1	-	.00
F	<i>Descurainia pinnata</i> (a)	_a -	_a -	_{ab} 6	_b 8	-	-	2	5	.01	.03
F	<i>Draba</i> spp. (a)	-	-	-	1	-	-	-	1	-	.00
F	<i>Gilia aggregata</i>	5	-	-	-	2	-	-	-	-	-
F	<i>Haplopappus acaulis</i>	-	4	-	-	-	1	-	-	-	-
F	<i>Lappula occidentalis</i> (a)	-	-	3	9	-	-	1	5	.00	.02
F	<i>Microsteris gracilis</i> (a)	-	-	-	2	-	-	-	2	-	.01
F	<i>Penstemon humilis</i>	_b 49	_b 36	_a 3	_b 24	23	15	2	15	.01	.22
F	<i>Phlox hoodii</i>	115	133	104	111	53	58	52	49	2.30	2.45
F	<i>Phlox longifolia</i>	11	6	13	5	4	2	7	3	.03	.04
F	<i>Senecio multilobatus</i>	_b 21	_a -	_a 3	_a 4	9	-	1	2	.00	.03
F	<i>Trifolium</i> spp.	_b 45	_a 6	_a 3	_b 43	23	4	1	20	.00	.27
Total for Annual Forbs		0	0	24	65	0	0	13	33	0.12	0.29
Total for Perennial Forbs		337	210	189	283	157	95	92	133	3.00	4.16
Total for Forbs		337	210	213	348	157	95	105	166	3.12	4.45

Values with different subscript letters are significantly different at alpha = 0.10 (annuals excluded)

BROWSE TRENDS --

Herd unit 02 , Study no: 32

Type	Species	Strip Frequency		Average Cover %	
		'96	'01	'96	'01
B	Artemisia nova	55	52	6.93	7.48
B	Artemisia tridentata wyomingensis	50	41	6.50	6.23
B	Atriplex canescens	0	0	-	.00
B	Chrysothamnus nauseosus consimilis	0	2	-	-
B	Chrysothamnus viscidiflorus stenophyllus	13	11	.10	.53
B	Eriogonum microthecum	1	2	.03	.15
B	Juniperus osteosperma	23	20	7.63	11.09
B	Leptodactylon pungens	0	1	-	.03
B	Opuntia spp.	1	0	-	-
B	Tetradymia canescens	0	1	-	-
Total for Browse		143	130	21.20	25.53

CANOPY COVER --

Herd unit 02 , Study no: 32

Species	Percent Cover		Point-Quarter Tree Data		Average diameter (in)	
	'96	'01	Trees per Acre		'96	'01
Juniperus osteosperma	15	13	235	216	5.2	6.0

BASIC COVER --

Herd unit 02 , Study no: 32

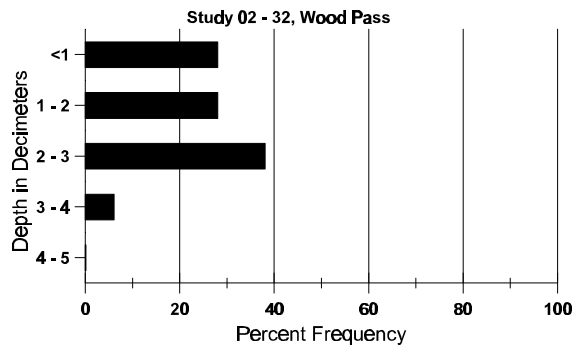
Cover Type	Nested Frequency		Average Cover %			
	'96	'01	'84	'90	'96	'01
Vegetation	311	309	1.75	6.00	29.52	36.61
Rock	114	60	2.00	3.25	1.21	1.04
Pavement	221	210	14.75	18.00	4.10	3.92
Litter	393	376	55.50	41.00	39.92	40.78
Cryptogams	177	63	3.00	8.75	4.83	3.94
Bare Ground	228	273	23.00	23.00	21.77	37.10

SOIL ANALYSIS DATA --

Herd Unit 02, Study no: 32, Wood Pass

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
9.7	60.6 (12.7)	7.4	32.9	36.7	30.4	3.3	4.5	70.4	.7

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 02 , Study no: 32

Type	Quadrat Frequency	
	'96	'01
Rabbit	15	20
Elk	2	-
Deer	38	17
Cattle	1	4

Pellet Transect	
Pellet Groups per Acre	Days Use per Acre (ha)
'01	'01
157	N/A
-	-
244	19 (46)
113	9 (23)

BROWSE CHARACTERISTICS --

Herd unit 02 , Study no: 32

A G R E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Artemisia nova																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	84	2	-	-	-	-	-	-	-	-	2	-	-	-	133		2	
	90	1	1	-	-	-	-	-	-	-	2	-	-	-	133		2	
	96	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5	
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
M	84	2	5	-	-	-	-	-	-	-	7	-	-	-	466	9	16	7
	90	2	4	-	-	-	-	-	-	-	6	-	-	-	400	10	13	6
	96	113	21	-	4	-	-	-	-	-	138	-	-	-	2760	11	21	138
	01	128	-	-	-	-	-	-	-	-	128	-	-	-	2560	12	22	128
D	84	-	9	-	-	-	-	-	-	-	9	-	-	-	600		9	
	90	11	4	-	-	-	-	-	-	-	9	-	2	4	1000		15	
	96	27	17	3	-	-	-	-	-	-	44	-	-	3	940		47	
	01	51	8	-	-	-	-	-	-	-	48	-	-	11	1180		59	
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	460		23	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	580		29	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		78%			00%			00%			+22%							
'90		39%			00%			26%			+60%							
'96		20%			02%			02%			- 1%							
'01		04%			00%			06%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	1199	Dec:	50%			
												'90	1533		65%			
												'96	3800		25%			
												'01	3760		31%			

A Y G R E	Form Class (No. of Plants)	Vigor Class									Plants Per Acre	Average (inches)		Total			
		1	2	3	4	5	6	7	8	9		1	2		3	4	Ht.
Artemisia tridentata wyomingensis																	
S	84	3	-	-	-	-	-	-	-	-	3	-	-	-	200		3
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	96	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
Y	84	7	3	-	-	-	-	-	-	-	10	-	-	-	666		10
	90	14	11	1	-	-	-	-	-	-	18	7	1	-	1733		26
	96	32	-	-	-	-	-	-	-	-	32	-	-	-	640		32
	01	16	-	-	-	-	-	-	-	-	16	-	-	-	320		16
M	84	6	13	2	-	-	-	-	-	-	20	-	1	-	1400	18 24	21
	90	2	7	5	-	-	-	-	-	-	13	-	1	-	933	18 20	14
	96	37	15	2	-	-	-	-	-	-	54	-	-	-	1080	17 31	54
	01	51	6	-	4	2	-	-	-	-	63	-	-	-	1260	16 28	63
D	84	3	34	2	-	-	-	-	-	-	29	1	9	-	2600		39
	90	6	17	4	-	1	-	-	-	-	19	1	5	3	1866		28
	96	17	19	-	-	-	-	-	-	-	36	-	-	-	720		36
	01	10	4	-	7	-	-	-	-	-	13	1	-	7	420		21
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	600		30
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	620		31
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>			
'84		71%				06%				14%				- 3%			
'90		53%				15%				15%				-46%			
'96		28%				02%				00%				-18%			
'01		12%				00%				07%							
Total Plants/Acre (excluding Dead & Seedlings)												'84	4666	Dec:	56%		
												'90	4532		41%		
												'96	2440		30%		
												'01	2000		21%		
Atriplex canescens																	
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6 10	0
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>			
'84		00%				00%				00%							
'90		00%				00%				00%							
'96		00%				00%				00%							
'01		00%				00%				00%							
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-		
												'90	0		-		
												'96	0		-		
												'01	0		-		

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus nauseosus consimilis																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	24	28	0
	01	2	-	-	-	-	-	-	-	-	-	2	-	-	40	31	45	2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%										
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	0		-			
												'96	0		-			
												'01	40		-			
Chrysothamnus viscidiflorus stenophyllus																		
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	3	2	1	-	-	-	-	-	-	6	-	-	-	400			6
	96	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
	01	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
M	84	5	-	-	-	-	-	-	-	-	5	-	-	-	333	10	12	5
	90	5	6	4	-	-	-	-	-	-	13	2	-	-	1000	7	11	15
	96	5	-	-	3	-	-	-	-	-	8	-	-	-	160	8	11	8
	01	15	-	-	-	-	-	-	-	-	15	-	-	-	300	9	17	15
D	84	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	10	3	-	-	-	-	-	-	-	4	-	-	9	260			13
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			+67%							
'90		38%			24%			00%			-64%							
'96		12%			00%			36%			-24%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	466	Dec:	29%			
												'90	1400		0%			
												'96	500		52%			
												'01	380		0%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Eriogonum microthecum																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20	6	9	1
	01	3	-	-	-	-	-	-	-	-	3	-	-	-	60	5	10	3
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%			+67%							
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	0		-			
												'96	20		-			
												'01	60		-			
Juniperus osteosperma																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
Y	84	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	90	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	96	7	-	-	-	-	-	-	-	-	7	-	-	-	140			7
	01	4	-	-	2	-	-	-	-	-	6	-	-	-	120			6
M	84	-	-	-	2	-	-	-	-	-	2	-	-	-	133	69	43	2
	90	-	2	-	-	-	2	-	-	-	4	-	-	-	266	84	49	4
	96	15	-	-	-	-	-	-	3	-	18	-	-	-	360	-	-	18
	01	13	-	-	1	1	-	1	-	-	16	-	-	-	320	-	-	16
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	1	-	1	-	-	-	20			1
X	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%			+33%							
'90		33%			33%			00%			+20%							
'96		00%			00%			00%			- 8%							
'01		04%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	266	Dec:	0%			
												'90	399		0%			
												'96	500		0%			
												'01	460		4%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Leptodactylon pungens																		
S	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	90	4	-	-	-	-	-	-	-	-	-	4	-	-	266		4	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	90	1	-	-	-	-	-	-	-	-	-	1	-	-	66	2	1	
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	01	1	-	-	-	-	-	-	-	-	-	1	-	-	20	-	1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%										
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	66		-			
												'96	0		-			
												'01	20		-			
Opuntia spp.																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	90	1	-	-	-	-	-	-	-	-	-	1	-	-	66	3	1	
	96	3	-	-	-	-	-	-	-	-	-	3	-	-	60	4	3	
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	4	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'84		00%			00%			00%										
'90		00%			00%			00%			- 9%							
'96		00%			00%			00%										
'01		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	66		-			
												'96	60		-			
												'01	0		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Symphoricarpos oreophilus																		
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14	27	0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15	29	0
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
'84		00%				00%				00%								
'90		00%				00%				00%								
'96		00%				00%				00%								
'01		00%				00%				00%								
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	-			
												'90	0		-			
												'96	0		-			
												'01	0		-			
Tetradymia canescens																		
Y	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	1	-	-	-	-	-	-	1	-	-	-	66			1
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6	8	0
	01	1	-	-	-	-	-	-	-	-	1	-	-	-	20	11	19	1
D	84	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	1	-	-	-	-	1	-	-	-	66			1
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	01	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
'84		00%				00%				00%								
'90		50%				50%				00%								
'96		00%				00%				00%								
'01		00%				00%				00%								
Total Plants/Acre (excluding Dead & Seedlings)												'84	0	Dec:	0%			
												'90	132		50%			
												'96	0		0%			
												'01	20		0%			